

# On the doubly connected domination polynomial of a graph

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## Abstract

© 2019 World Scientific Publishing Company Let  $G$  be a simple graph. A set  $S$  is a doubly connected dominating set of  $G$  if it is a dominating set and both induced subgraphs  $G[S]$  and  $G[G \setminus S]$  are connected. In this paper, we introduce the doubly connected domination polynomial of a graph. We investigate some properties of these polynomials for some specific graphs. Also, we compute the doubly connected domination polynomial for some families of graphs such as the friendship graphs and the cactus chains graphs.

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## Keywords

Cactus chain graph, Domination polynomial, doubly connected set, friendship graph